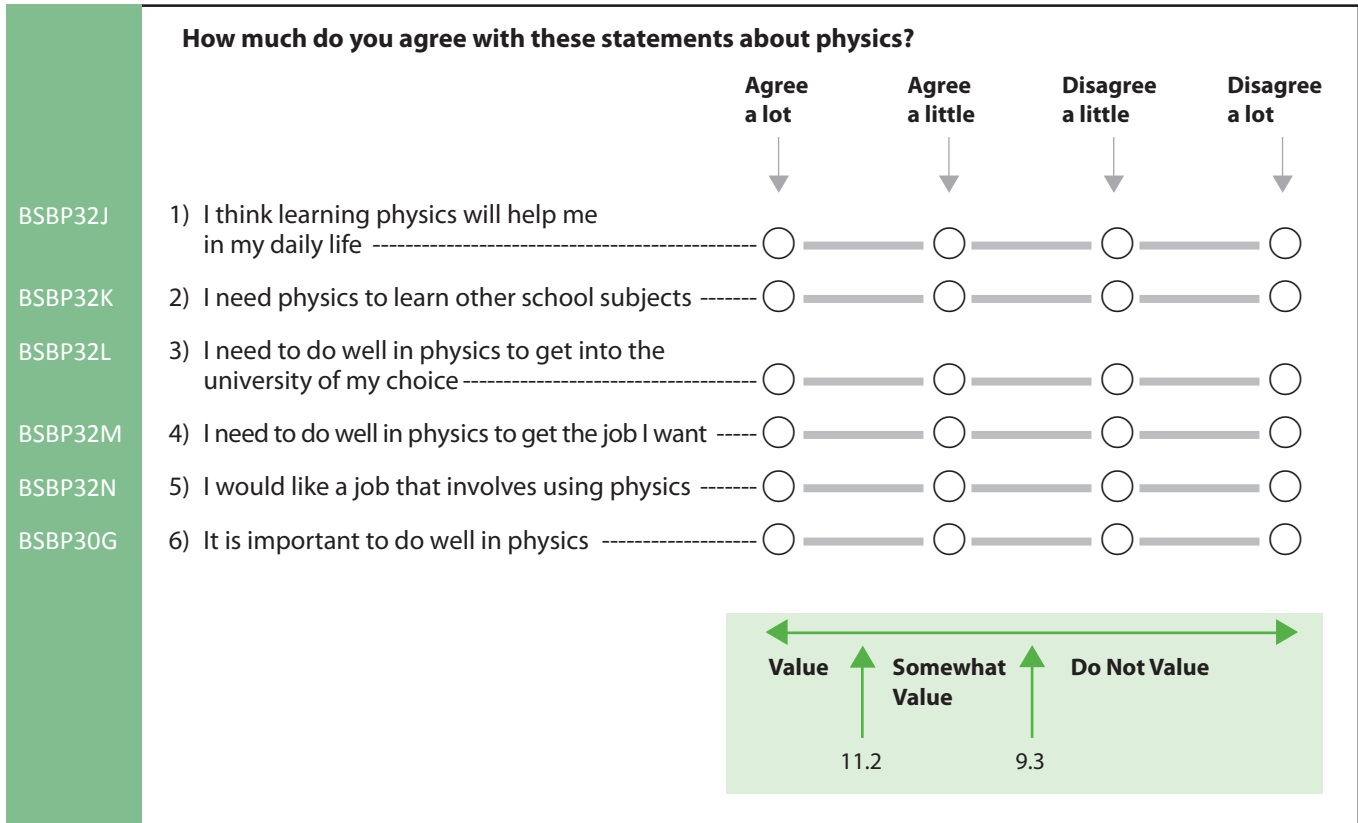


# TIMSS 2011

## The TIMSS 2011 Students Value Physics Scale, Eighth Grade

The Students Value Physics (SVP) scale was created based on students' degree of agreement to the six statements described below. This scale was administered in countries where the sciences are taught as separate subjects. See [Creating and Interpreting TIMSS and PIRLS 2011 Context Questionnaire Scales](#) for more information on how the scales were formed.

**Exhibit 1: Items in the TIMSS 2011 Students Value Physics Scale, Eighth Grade**



**Exhibit 2: Item Parameters for the TIMSS 2011 Students Value Physics Scale, Eighth Grade**

Item	delta	tau_1	tau_2	tau_3
BSBP32J	-1.45227	-1.27525	-0.34441	1.61966
BSBP32K	-0.88602	-1.62415	-0.17366	1.79781
BSBP32L	-0.60718	-1.32728	-0.05777	1.38505
BSBP32M	-0.40937	-1.41482	0.05730	1.35752
BSBP32N	0.23475	-1.34073	0.09230	1.24843
BSBP30G	-1.60391	-1.30176	-0.37280	1.67456

**Exhibit 3: Scale Transformation Constants**

Scale Transformation Constants

A = 10.06806

B = 1.03847

Transformed Scale Score = 10.06806 + 1.03847 • Logit Scale Score

**Exhibit 4: Equivalence Table of the Raw Score and the Transformed Scale Score**

Raw Score	Transformed Scale Score	Cutpoint	Raw Score	Transformed Scale Score	Cutpoint
0	5.02363		10	9.53265	
1	6.23002		11	9.83532	
2	6.84582		12	10.14513	
3	7.29430		13	10.46975	
4	7.67036		14	10.82031	
5	8.00920		15	11.21082	11.2
6	8.32759		16	11.68191	
7	8.63460		17	12.32485	
8	8.93555		18	13.56979	
9	9.23392	9.3			

**Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Students Value Physics Scale, Eighth Grade**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			BSBP32J	BSBP32K	BSBP32L	BSBP32M	BSBP32N	BSBP30G
Armenia	0.86	59	0.69	0.75	0.86	0.87	0.84	0.54
Finland	0.90	67	0.80	0.80	0.85	0.87	0.78	0.79
Georgia	0.87	60	0.77	0.75	0.85	0.85	0.77	0.65
Hungary	0.89	64	0.79	0.80	0.84	0.87	0.78	0.72
Indonesia	0.86	60	0.74	0.74	0.85	0.86	0.76	0.67
Kazakhstan	0.86	59	0.78	0.73	0.85	0.86	0.76	0.61
Lebanon	0.88	63	0.79	0.81	0.85	0.85	0.77	0.68
Lithuania	0.89	64	0.82	0.83	0.87	0.86	0.72	0.70
Macedonia, Rep. of	0.90	68	0.76	0.84	0.89	0.88	0.83	0.70

**Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Students Value Physics Scale, Eighth Grade (Continued)**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			BSBP32J	BSBP32K	BSBP32L	BSBP32M	BSBP32N	BSBP30G
Morocco	0.86	59	0.72	0.78	0.85	0.85	0.73	0.65
Romania	0.89	64	0.77	0.81	0.86	0.85	0.78	0.71
Russian Federation	0.88	62	0.77	0.76	0.87	0.88	0.79	0.63
Slovenia	0.87	61	0.81	0.78	0.84	0.85	0.71	0.68
Sweden	0.89	65	0.79	0.80	0.88	0.87	0.77	0.72
Syrian Arab Republic	0.86	60	0.73	0.79	0.85	0.83	0.73	0.68
Ukraine	0.87	61	0.80	0.80	0.85	0.84	0.71	0.70

**Exhibit 6: Relationship Between the TIMSS 2011 Students Value Physics Scale, Eighth Grade, and TIMSS 2011 Science Achievement**

Country	Pearson's Correlation with Science Achievement		Variance in Science Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )
	(r)	(r <sup>2</sup> )	
Armenia	-0.02	0.00	0.00
Finland	0.26	0.07	0.04
Georgia	-0.07	0.00	0.01
Hungary	0.09	0.01	0.01
Indonesia	-0.09	0.01	0.01
Kazakhstan	-0.02	0.00	0.01
Lebanon	0.06	0.00	0.00
Lithuania	0.05	0.00	0.00
Macedonia, Rep. of	-0.17	0.03	0.03
Morocco	-0.04	0.00	0.00
Romania	-0.01	0.00	0.00
Russian Federation	0.12	0.01	0.01
Slovenia	0.17	0.03	0.02
Sweden	0.14	0.02	0.01
Syrian Arab Republic	-0.03	0.00	0.00
Ukraine	0.06	0.00	0.00
<b>International Median</b>	<b>0.02</b>	<b>0.00</b>	<b>0.01</b>